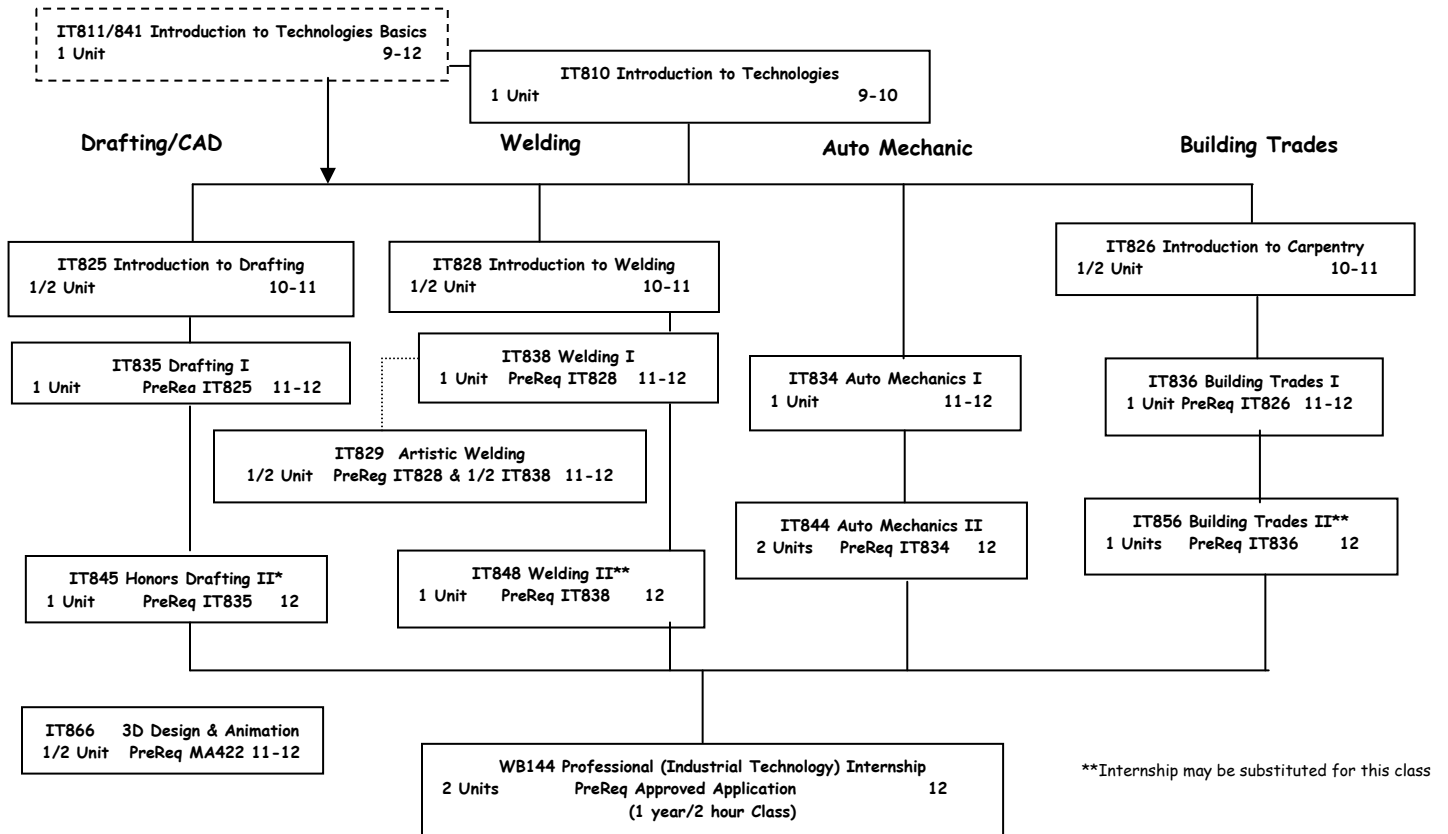


## INDUSTRIAL TECHNOLOGY DEPARTMENT

Course	Level
IT811- IT841 Introduction to Technologies Basics	9-12
IT810 Introduction to Technologies	9-10
IT825 Introduction to Drafting	10-11
IT826 Introduction to Carpentry	10-11
IT828 Introduction to Welding	10-11
IT829 Welding Art	11-12
IT834 Auto Mechanics I	11-12
IT835 Drafting I	11-12
IT836 Building Trades I	11-12
IT838 Welding I	11-12
IT866 3D Design & Animation	11-12
IT844 Auto Mechanics II	12
IT845 Honors Drafting II*	12
IT856 Building Trades II	12
IT848 Welding II	12

### Industrial Technology Career Paths



**COURSE NUMBER IT811/IT821/IT831/IT841 INTRODUCTION TO TECHNOLOGIES BASICS (SP802)**

CREDIT: 1

PREREQUISITES: None

Grade: 9-12

This course is designed to give students learning experiences that will be helpful for life/skill competencies. Learning activities will include “hands-on” laboratory experiences in wood, metal, plastics, etc. The projects will be of the practical nature.

**COURSE NUMBER IT810 INTRODUCTION TO TECHNOLOGIES (I500)**

CREDIT: 1

PREREQUISITES: None

Grade: 9-10

This course is designed to inform students about today’s industrial world and the types of industry located in our area. Students will spend approximately 75% of the scheduled time doing “hands-on” activities related to the areas of communication, building trades, transportation, and energy.

The activities and projects will have application to everyday situations and the main goal of the course will be to help students see how technology affects each of them and their choice of jobs.

**COURSE NUMBER IT825 INTRODUCTION TO DRAFTING (I501)**

CREDIT: 1/2

PREREQUISITES: None

Grade: 10-11

Drafting is often called the “universal language”. Students will be taught how to read simple blueprints, read and understand the different types of lines used in drafting, and to draw and interpret three view drawings, pictorial drawings, and sectional drawings. Other skills students should learn will include: sketching of objects, lettering, neatness, accuracy, and dimensioning, and interpreting other drawings. Students will also be exposed to computer drafting. Drafting is a skill that is necessary in most other industrial areas. *(Students may enroll and receive 4 hours dual credit for DFTG 140.)*

**COURSE NUMBER IT826 INTRODUCTION TO CARPENTRY (I511)**

CREDIT: 1/2

PREREQUISITES: None

Grade: 10-11

This one-semester introductory level course deals with the basics of construction and the building trades. Learning experiences will familiarize students with where this occupational area fits into business and industry and the kinds of occupations that fit into this occupational cluster. Students will develop knowledge and skills needed to safely use power tools, to use measuring instruments, and to plan projects. They will develop basic skills necessary for construction trades occupations. Student experiences will include activities in the classroom, laboratory shop, and simulated work settings. *(Students may enroll and receive 2 hours dual credit for CSTR 100.)*

**COURSE NUMBER IT828 INTRODUCTION TO WELDING (I565)**

CREDIT: 1/2

PREREQUISITES: None

Grade: 10-11

Major topics of study include all phases of oxy-acetylene welding and cutting (OAW gas welding), shielded metal arc welding (stick electrode welding), and gas metal arc welding (MIG welding) from equipment used in each process to its set up. Students will be involved in individual and group assignments. This course is a hands-on class with a high percentage of time spent in shop activities. Individuals must provide protective clothing such as gloves and cover shirt.

**COURSE NUMBER IT829 WELDING ART**

CREDIT: 1/2

PREREQUISITES: Intro to Welding and at least 1 semester of Welding I

Grade: 11-12

This course is a hands-on class with a high percentage of the time spent on welding art projects. The course is designed to expand the student's knowledge and skill levels in the welding areas introduced in Welding I. Students will produce two- and three-dimensional metal artwork utilizing a variety of shop tools. Individuals must provide their own gloves, cover shirt, and welding cap. Some project costs will be incurred by the student.

**COURSE NUMBER IT834 AUTO MECHANICS I (I515)**

CREDIT: 1

PREREQUISITES: None

Grade: 11

Instruction in Auto Mechanics I will begin with safety in the shop, employment opportunities, and the identification of hand/power tools and equipment which will be utilized in shop repair procedures. An overview of basic automotive systems including theory, diagnosis, and repair will be presented. Basic operation systems including ignition, fuel, lubrication, cooling, and restraint systems will be covered in detail. This course is a combination of classroom and instructor demonstrations. *(Students may enroll and receive 4 hours dual credit for AUTO 111 & 119.)*

**COURSE NUMBER IT835 DRAFTING I (I502)**

CREDIT: 1

PREREQUISITES: Passed IT825

Grade: 11-12

Drafting I will continue to add to the skills and knowledge students gained in Introduction to Drafting. Students will draw machine parts, which are broken or cut away to show the interior more clearly. The true size and shape of angular or odd-shaped surfaces will be found through the use of auxiliary views. Computer-aided drafting will be used to study threads, detailed working drawings, map drafting, and sheet metal drawings. *(Students may enroll and receive 3 hours dual credit for DFTG 122.)*

**COURSE NUMBER IT836 BUILDING TRADES I (I567)**

CREDIT: 1

PREREQUISITES: IT826

Grade: 11-12

This full year class will provide students with experiences in building principles. Units of study will include: review of safety practices and principles; principles of building structures; footings, foundations and basement layout methods; local, state, and national codes; cost estimating; read and interpret blueprints; floor, wall, ceiling and roof frame; applying roofing materials; lay out and constructing sidewalks, porches and driveways; grade yards. This program is designed to equip students with the basics in construction occupations. *(Students who complete both IT836 and IT846 may enroll and receive 3 hours dual credit for CSTR 103.)*

**COURSE NUMBER IT838 WELDING I (I566)**

CREDIT: 1

PREREQUISITES: IT828

Grade: 11

This course is designed to expand the student's knowledge and skill level in the welding areas introduced in Introduction to Welding. Out-of-position welding in OAW, SMAW, and GMAW processes will be included. Gas tungsten arc welding (TIG welding) as well as the use of the MIG spool gun for various metals and alloys will be included in Welding I. Students will study the elements necessary to become engaged in a career in metal fabrication and welding. Individual and group projects will help make this a practical course. *(Students may enroll and receive 7 hours dual credit for WELD 188 and WELD 114.)*

**COURSE NUMBER IT844 AUTO MECHANICS II (I516)**

CREDIT: 2

PREREQUISITES: Passed IT834 (Completed application, limited class size)

Grade: 12

This is a two-hour year-long shop class concentrating on advanced theory, diagnosis, and repair of automobiles and light trucks. The major emphasis is upon hands-on shop experience with students being graded on performance, effort, following instructions, and participation. Areas of concentration include: brakes and suspension, drivability problems, engine performance, fuel systems, electrical, and electronic systems. *(Students may enroll and receive 4 hours dual credit for AUTO 139.)*

**COURSE NUMBER IT845 HONORS DRAFTING II\* (I503)**

CREDIT: 1

PREREQUISITES: A or B in IT835 (Completed application, limited class size)

Grade: 12

This course will continue to add to the student's drafting knowledge. Students will concentrate on advanced mechanical drafting in the area of cams and gears. Also students will work in the area of sheet metal drafting. This area includes layout, transition, etc., and further explores computer aided drafting.

Another area covered will be architectural drafting. This area will include drawing details of house plans and actual "working drawings" of a small frame house. Experiences will be gained in the planning of the house on the lot and the "whys" of room arrangements; some aspects of building and ownership are discussed. *(Students may enroll and receive 4 hours dual credit for DFTG 209.)*

**COURSE NUMBER IT856 BUILDING TRADES II (I577)**

CREDIT: 1

PREREQUISITES: IT836 (Completed application, limited class size)

Grade: 12

This full year course will build on skills and competencies students gained in the Building Trades I class. Units of study will include: insulating methods and materials; dry wall applications and finishing; observation of installation of plumbing fixtures; heating and air conditioning; and observe and discuss rough wiring, finishing interior and exterior surfaces; installing cabinets, flooring; and all skills necessary for finishing a house. Experiences are designed to allow students to acquire job-entry-level skills and knowledge. *(Students who complete both IT836 and IT846 may enroll and receive 4 hours dual credit for CSTR 103.)*

**COURSE NUMBER IT848 WELDING II (I528)**

CREDIT: 1

PREREQUISITES: IT838 (Completed application, limited class size)

Grade: 12

Further refinement of mechanical and technical welding skills will be a portion of this advanced class. The study of the science of metals, metallurgy, will be an essential aspect of Welding II. Industry advancements and improvements will be explored. Robotics and other computer-assisted welding will be studied. In class and out-of-class activities will be utilized to prepare the prospective metal-working employee. *(Students may enroll and receive 3 hours dual credit for WELD 122.)*

**COURSE NUMBER IT866 3D DESIGN & ANIMATION**

CREDIT: 1/2

PREREQUISITES: Currently enrolled or completed Geometry MA 422

Grade: 11-12

This semester course will provide students with experiences creating 3D objects, lofting 2D shapes into 3D objects, editing objects, assigning materials to objects, adding cameras and lights to a scene and finally animating the scene by putting it in motion. This course is taught in a tutorial format with exercises and assignments in each chapter. Students will also do a major project at the end of the course.